

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1.–72. (Canceled)

Please add the following new claims—

Claim 73. A carrier for detecting an analyte in a sample, comprising an analyte binding moiety and a signaling moiety each associated with the carrier, the analyte binding moiety being associated with the carrier so that it is disposed away from the carrier a greater distance than the signaling moiety is disposed from the carrier and the signaling moiety being releasably associated with the carrier so that it is released when the carrier is treated to a releasing condition.

Claim 74. The carrier of claim 73 wherein the signaling moiety comprises a member is selected from the group consisting of a chemiluminescent moiety, an electrochemiluminescent moiety, a fluorescent moiety, a chromogenic moiety and an enzyme.

Claim 75. The carrier of claim 74 wherein the chemiluminescent or electrochemiluminescent moiety is selected from the group consisting of a rare earth element and acridinium.

Claim 76. The carrier of claim 75 wherein the rare earth element is europium.

Claim 77. The carrier of claim 73 wherein the signaling moiety is releasably associated with the carrier through a dissociable linker, said dissociable linker comprising a nucleic acid sequence hybridized to a second nucleic acid sequence attached to the carrier, a photolabile linkage, an enzymatically cleavable linkage or a chemically cleavable linkage.

Claim 78. The carrier of claim 73 wherein the carrier is a particle, and wherein the signaling moiety is encapsulated in the particle and the releasing condition is physical crushing of the particle, swelling or solubilization of the particle.

Claim 79. The carrier of claim 73 further linked to a second carrier.

Claim 80. The carrier of claim 75 wherein the signaling moiety comprises a rare

earth element that is associated with the carrier through a chelating moiety.

Claim 81. The carrier of claim 73 wherein the analyte binding moiety and the signaling moiety are linked to one another through a first linkage and the analyte binding moiety or the signaling moiety or both moieties are linked to the carrier through a second linkage different from the first linkage.

Claim 82. A method of analyzing a sample for the presence of an analyte, comprising

contacting the sample with a first analyte binding moiety associated with a substrate to form a bound complex on the substrate;

contacting the bound complex with a carrier comprising a second analyte binding moiety and a signaling moiety that is releasably associated with the carrier when the carrier is treated to a releasing condition;

removing carriers that do not bind the analyte and retaining carriers that do bind the analyte on the substrate;

releasing the signaling moiety from the retained carriers; and

detecting the released signaling moiety.

Claim 83. The method of claim 82 wherein the substrate is a magnetic particle.

Claim 84. The method of claim 82 wherein the signaling moiety is releasably associated with the carrier through a dissociable linker, wherein said dissociable linker comprises a nucleic acid sequence hybridized to a second nucleic acid sequence attached to the carrier, a photolabile linkage, an enzymatically cleavable linkage or a chemically cleavable linkage.

Claim 85. The method of claim 82 wherein the carrier is a particle, and wherein the signaling moiety is encapsulated in the particle and the releasing condition is physical crushing of the particle, swelling, or solubilization of the particle.

Claim 86. The method of claim 82 wherein the carrier is further linked to a second carrier.

Claim 87. The method of claim 82 wherein the signaling moiety comprises a member selected from the group consisting of: a chemiluminescent moiety, an electrochemiluminescent moiety, a fluorescent moiety, a chromogenic moiety and an enzyme.

Claim 88. The method of claim 87 wherein the chemiluminescent or electrochemiluminescent moiety is selected from the group consisting of a rare earth element and acridinium.

Claim 89. The method of claim 88 wherein the signaling moiety comprises a rare earth element that is associated with the carrier through a chelating moiety.

Claim 90. The method of claim 82 wherein the carrier further comprises a first binding partner that binds to a second binding partner other than the analyte, and further including;

- contacting the retained carrier with a second carrier associated with a second binding partner that binds the first binding partner and with the signaling moiety that is also releasably associated with the second carrier to form a multi-carrier complex;

- prior to releasing the signal moieties, removing the second carriers that are not in the multi carrier complex and retaining the multi carrier complex;

- releasing the signal moieties from the multi carrier complex; and

- detecting the released signal moieties.

Claim 91. The method of claim 82 wherein the second carrier further includes a third binding partner that binds to a fourth binding partner different from first and second binding partners and further including;

- contacting the second carrier with a third carrier comprising the fourth binding partner and the signaling moiety releasably associated with the third carrier to form a second multi carrier complex;

- prior to releasing the signal moieties, removing the third carriers that are not in the second multi carrier complex and retaining the second multi carrier complex;

- releasing the signal moieties from the second multi carrier complex; and

- detecting the released signal moieties.

Claim 92. A method for analyzing a sample for the presence of an analyte, comprising

- contacting the sample with a first carrier associated with an analyte binding molecule and a releasable adapter having a first domain comprising a first binding partner that binds a second binding partner, and a second domain comprising a third binding partner that binds a fourth binding partner other than the second binding partner;

- removing the first carriers that are not bound to the analyte and retaining the first carriers that are bound to the analyte;

- releasing the releasable adapter from the retained first particles;

- contacting the released adapter with a second carrier associated with a releasable signaling moiety and with the second binding partner that binds the first binding partner of the released adapter;

- contacting the second carrier with a substrate that is linked to the fourth binding partner that binds the third binding partner of the released adapter to form a substrate carrier complex;

removing the second carriers that are not associated with the substrate carrier complex;

releasing the signal moieties from the second carriers; and

detecting the released signal moieties.

Claim 93. The method of claim 92 wherein the second carrier is a particle, and wherein the signaling moiety is encapsulated in the particle and the releasing condition is physical crushing, swelling or solubilization of the particle.

Claim 94. The method of claim 92 wherein the signaling moiety is acridinium.

Claim 95. A method for analyzing a sample for the presence of an analyte, comprising

contacting the sample with a first carrier associated with an analyte binding molecule releasably associated with the carrier, and where the analyte binding molecule has a first domain that binds the analyte and second domain that comprises a first binding partner that binds a second binding partner ;

contacting the first carrier with a substrate that binds the first carrier;

removing the first carriers that are not bound to the substrate and retaining the first carriers that are bound to the substrate ;

releasing the releasable analyte binding moiety from the retained first carriers;

contacting the released analyte binding moiety with a second carrier associated with a releasable signaling moiety and containing a second binding partner that binds the first binding partner on the released analyte binding molecule;

contacting the second carrier with a substrate that is associated with a third binding partner that binds a fourth binding partner on the analyte binding molecule;

removing the second carriers that are not associated with the substrate and retaining second carriers that are associated with the substrate ;

releasing the signal moieties from the retained second carriers; and

detecting the released signal moieties.

Claim 96. The method of claim 95 wherein the second carrier is a particle, and wherein the signaling moiety is encapsulated in the particle and the releasing condition is physical crushing, swelling or solubilization of the particle.

Claim 97. The method of claim 95 wherein the signaling moiety is acridinium. –